A displacement measuring laser heterodyne interferometer with sub-Angstrom accuracy

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Abstract

We propose and demonstrate a laser heterodyne interferometer consisting of symmetric measurement and reference beams for high accuracy displacement measurement. A proof-of-concept laboratory demonstration indicates that the periodic nonlinearity is smaller than 0.1nm. We will present the experiment details and discuss its potential applications in areas such as the Space Interferometry Mission.

Key words: Interferometry, metrology, nano-technology